

A Computed Tomography Study of Gender Differences in Acetabular Version and Morphology: Implications for Femoroacetabular Impingement. Tannenbaum EP, Zhang P, Maratt JD, Gombera MM, Holcombe SA, Wang SC, Bedi A, Goulet JA. *Arthroscopy*. 2015 Jul;31(7):1247–54. doi: 10.1016/j.arthro.2015.02.007. Epub 2015 May 13.

PURPOSE

To assess the prevalence of acetabular retroversion in a large population of patients with asymptomatic hips. Furthermore, we sought to identify gender differences in acetabular morphology to address the current thinking that retroversion and pincer-type femoroacetabular impingement (FAI) are more common in women.

METHODS

We retrospectively reviewed morphologic features of acetabula from a consecutive series of trauma-protocol computed tomography scans of patients without pelvis injury. An automated algorithm determined the acetabular rim profile and center of the femoral head, normalized the frontal plane of the pelvis, and calculated version and coverage. We then compared male and female rim profiles, specifically focusing on version and acetabular wall coverage in the 1-o'clock (anterosuperior), 2-o'clock (central), and 3-o'clock (inferior) positions.

RESULTS

Of 1,088 patients in the database, 878 had complete data (i.e., age, ethnicity, and body mass index) and were therefore included in the final analysis. Of these, 34.3% were women and 65.7% were men. Mean global acetabular version was 19.1° for men and 22.2° for women ($P < .001$). Mean acetabular version for men and women was 15.5° and 18.3°, respectively, in the 1-o'clock position; 21.5° and 24.0°, respectively, in the 2-o'clock position; and 20.2° and 24.3°, respectively, in the 3-o'clock position ($P < .001$ for all 3). True retroversion ($<0^\circ$) was observed only in the 1-o'clock position. The prevalence of true acetabular retroversion in the 1-o'clock position for men and women was 4.3% and 3%, respectively ($P = .36$).

CONCLUSIONS

Mean global and focal acetabular anteversion was greater in women, and the prevalence of focal cephalad retroversion in the 1-o'clock position was not significantly different compared with men. Acetabular retroversion and anterior overcoverage are not more prevalent in women in the anterosuperior acetabulum, where femoroacetabular impingement most commonly occurs.

LEVEL OF EVIDENCE

Level III, diagnostic study.